

## **DETAILED ACTION**

### ***Specification***

1. The use of the trademarks Irganox® , Irgafos® Naugard™ and Ethanox® has been noted in this application. It should be capitalized wherever it appears and be accompanied by the generic terminology.

Although the use of trademarks is permissible in patent applications, the proprietary nature of the marks should be respected and every effort made to prevent their use in any manner which might adversely affect their validity as trademarks.

### ***Claim Rejections - 35 USC § 101***

2. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim 12 provides for the use of the pipe, but, since the claim does not set forth any steps involved in the method/process, it is unclear what method/process applicant is intending to encompass. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced.

Claim 12 is rejected under 35 U.S.C. 101 because the claimed recitation of a use, without setting forth any steps involved in the process, results in an improper definition of a process, i.e., results in a claim which is not a proper process claim under

35 U.S.C. 101. See for example *Ex parte Dunki*, 153 USPQ 678 (Bd.App. 1967) and *Clinical Products, Ltd. v. Brenner*, 255 F. Supp. 131, 149 USPQ 475 (D.D.C. 1966).

5. Claims 4 and 5 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

6. Claims 4 and 5 contain the trademark/trade name Irganox® and Irgafos®. Where a trademark or trade name is used in a claim as a limitation to identify or describe a particular material or product, the claim does not comply with the requirements of 35 U.S.C. 112, second paragraph. See *Ex parte Simpson*, 218 USPQ 1020 (Bd. App. 1982). The claim scope is uncertain since the trademark or trade name cannot be used properly to identify any particular material or product. A trademark or trade name is used to identify a source of goods, and not the goods themselves. Thus, a trademark or trade name does not identify or describe the goods associated with the trademark or trade name. In the present case, the trademark/trade name is used to identify/describe hindered phenols and, accordingly, the identification/description is indefinite.

### ***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1-4 and 6-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Saxton (US 5,032,632) in view of Kazakov et al. (US 6,642,313).

9. Saxton teaches ethylene vinyl alcohol copolymer compositions which exhibit improved resistance to oxidative and thermal degradation as well as to gelation (column 1 lines 6-9).

10. In regards to claim 1 Saxton et al. teaches that the polymer composition comprises ethylene and 90-10% vinyl alcohol, which would mean from 10-90% ethylene (column 3 lines 10-12). Saxton further teaches that the polymer comprise a hindered phenolic antioxidant (hereinafter HPA) (column 3 lines 17-18) Saxton further teaches that one or more of the HPA can be used(column 4 lines 1-2), and gives examples of applicants first class, such as 1,3,5-trimethyl-2-4,6-tris(3,5-t-butyl-4-hydroxybenzyl)benzene (Ethanox® 330) as well as Applicant's second group of HPA, such as tetrakis(methylene(3,5-di-t-butyl-4-hydroxyhydrocinnamate)methane (Irganox 1010)(column 4 lines 7-10). Saxton further teaches that the film is suitable for use as a pipe (column 5 line 51).

11. In regards to claims 2, 3 and 7, since the reference is using the same HPA as Applicant's then the physical, chemical and mechanical properties of the HPA are inherently the same.

12. In regards to claim 4 Ethanox® 330 which was discussed above is equivalent to Irganox 1330, and Irganox® 1010 is also discussed as an antioxidant capable of use in the invention of Saxton.

13. In regards to claim 10 metal deactivators are metal containing chemical compounds used to stabilize liquids and to retard the formation of gummy residue, as such Saxton teaches using metal compounds as stabilizers (column 4 lines 19-64) as well as the overall compound being resistant to gel formation and specifically mentions using Irganox® 1024 (column 6 line 56).

14. In regards to claim 11 Saxton teaches the use of calcium bis(monoethyl(3,5-di-t-butyl-4-hydroxybenzyl)phosphonate as a possible stabilizer/antioxidant (column 6 lines 58-59).

15. While Saxton teaches a polyethylene composition which comprises HPA's they are silent regarding the density of the polyethylene, and any multimodal properties of the polyethylene.

16. Kazakov et al. teach a multimodal pipe which comprises polyethylene (column 1 lines 5-7) and at least one HPA (column 10 lines 50-62).

17. In regards to claims 1 9, and 13 Kazakov teaches a multimodal pipe comprising polyethylene (column 1 lines 5-7), that the polyethylene have a density of great than 0.940 g/cm<sub>3</sub> (column 1 lines 60-61). Kazakov further teaches that the pipe contains an HPA (column 10 lines 50-62). In regards to the rest of the properties of the claim, since the references used contain all aspects of Applicant's claim then the rest of the claimed properties of the first claim would be inherent.

18. In regards to claim 6 while Kazakov et al. do not specifically state that the polyethylene used is reactor grade polyethylene, they do show properties of the

polyethylene that are consistent with it being reactor grade such as a density greater than 0.925g.cm<sup>3</sup> and a polydispersity of 3.5 (column 1 lines 64-65).

19. In regards to claim 8 Kazakov et al. teach that the pipe be multimodal (column 1 lines 5-7).

20. In regards to claim 12 Kazakov et al. teach that the pipe may be used to for potable water (column 14 lines 7-10), which often is chlorinated water. As the reference pipes are made from the same material as applicants they it would be obvious to one of ordinary skill in the art at the time of the invention to carry water at an elevated temperature.

21. One of ordinary skill in the art at the time of the invention would be motivated to use the polyethylene film, which is suitable for use as a pipe, of Saxton which has improved resistance to oxidation and thermal degradation (column 1 lines 5-9), with the polyethylene film of the pipe of Kazakov et al, which offers a decrease in brittle failure at increased temperatures (Kazakov column 1 line 45 - column 14 line 5).

22. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kazakov et al. (US 6,642,313) in view of Saxton (US 5,302,632) and Takahashi et al (US 6,329,465)

23. As stated above Kazakov et al. and Saxton teach a pipe suitable for transporting potable water. However they are silent about the polyethylene of the pipe containing Irgafos 168 as phosphorus based stabilizer.

24. Takahashi et al. teach ethylene copolymer compositions used to make molded products including pipes (column 32 line 56 to column 33 line 4).

25. In regards to claim 5 Takahashi et al. teach that it is known in the art to use Irgafos® 168 with Irganox® compounds, such as Irganox® 1010 (column 53 lines 11-20).

26. One of ordinary skill in the art at the time of the invention would be motivated to modify the pipe of Kazakov et al. and Saxton with the films of Takahashi et al. because the films of Takahashi et al. would offer excellent mechanical strength to the pipes of Kazakov et al. and Saxton which have improved resistance to oxidation, and thermal degradation as well as a decrease in brittle failure at increased temperatures as discussed above.

### ***Conclusion***

The other references in the International Search Report submitted 05/10/2006 which were not used in the rejection cover polyolefin materials, specifically polyethylene materials that make use of HPA's to improve the physical and mechanical properties. The references could have been used to a varying extent in place of Kazakov et al as well as Saxton.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ERIK KASHNIKOW whose telephone number is (571)270-3475. The examiner can normally be reached on Monday-Friday 7:30-5:00PM EST (First Friday off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Callie Shosho can be reached on (571) 272-1123. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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